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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,558	01/25/2002	Faramarz Sabouri	5581	8808

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EXAMINER

TRAN, CON P

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 02/12/2004

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/056,558

Applicant(s)

SABOURI ET AL.

Examiner

Con P. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Objection

1. **Claims 1-3, 11-13, 8-10, and 20** are objected to because of the following informalities: Regarding claim 1, line 14, it is not clear as to which component the pronoun "that" represents for. If "that" represents "said matching impedance", it is requested that the phrase "said matching impedance" to be used to improve the clarity of the claim language. The same remark applies to claim 8, line 12.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-9, and 11-20** are rejected under 35 U.S.C. 102(b) as being anticipated by Ashley et al. (U.S. 5,528,630, hereinafter, "Ashley").

Regarding **claims 1-2, and 4-8**, Ashley teaches high-band transceiver (108 or 111; Fig. 1 and 3) of central office (101; col. 2, lines 47-53) including transmit (T_x) and receive (RCV) circuits. Outputs of transmission amplifiers coupled to inputs of

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receiver amplifiers (see Fig. 3). Coupler (110; i.e., transmission line interface circuit) includes an isolation transformer (301) having a primary winding (303) and a secondary winding (302). Each of these windings has a pair of winding terminals (306) and (307) designate (arbitrary) the terminal ends of primary winding (303; col. 3, lines 52-64). The split primary and secondary windings for differential signals on tip and ring (i.e., differential transmitter input coupled to a differential input of a transmission amplifier; col. 4, lines 37-41). Circuit (313; i.e., matching network; col. 4, lines 44-54) in combination with low-pass filter (312), provides a second impedance in a second frequency band (i.e., matching impedance; col. 4, lines 20-35). Circuit (313; i.e., matching network; col. 4, lines 44-54) coupled to first output of the transmission amplifier (upper output to terminal 306) via the first primary transformer winding (between terminal 306 and 310) at one end of the matching impedance (terminal 310) and is coupled to a second output of the transmission amplifier (lower output to terminal 307) via the second primary transformer winding (between terminal 307 and 311) at a second end (terminal 311) of the matching impedance, and coupler (110) terminates the transmission line of the transceiver system (see Fig. 3 and respective portions of the specification; col. 3, lines 52-64.)

Claims 1-2, and 4-8 are thus met in view of the above discussion.

Regarding **claim 3**, Ashley further teaches circuit (313, matching network; col. 4, lines 44-54) in combination with the windings of transformer (301) and low-pass filter (312); provides a high-pass filter in frequency band (105; col. 4, lines 40-43).

Regarding **claim 9**, Ashley further teaches transceiver system transmission further includes a second negative feedback path for the transmission amplifier (from terminal 310 to terminal 314 through inverse terminal of left-hand receiver amplifier to inverse terminal of transmission upper amplifier; see Fig. 3).

Regarding **claim 11**, Ashley further teaches wherein said first primary transformer winding (upper coil 303) is directly coupled to said first output of said transmission amplifier and is directly coupled to said matching impedance (circuit 313; i.e., matching network; col. 4, lines 44-54), and said second primary transformer winding (lower coil 303) is directed to said second output of said transmission amplifier and is directly coupled to said matching impedance (313; see Fig. 3 and respective portions of the specification; col. 3, lines 52-64).

Regarding **claims 12, 14, and 17**, Ashley further teaches a first negative feedback path including a resistor from output of upper transmission amplifier to its inverse input; and a second negative feedback path for the transmission amplifier (from terminal 310 to terminal 314 through inverse terminal of left-hand receiver amplifier to inverse terminal of transmission upper amplifier; Fig. 3).

Regarding **claims 13, 15, and 18**, Ashley further teaches wherein said first negative feedback path extends from a first side (306, 307) of each of said first and

second primary transformer windings (303) to the inputs of said transmission amplifier, and said second negative feedback path extends from a second side (310, 311) of each of said first and second primary transformer windings to the inputs of said transmission amplifier (see Fig. 3 and respective portions of the specification).

Regarding **claims 16, 19, and 20**, Ashley further teaches coil (302) is a secondary transformer wiring (Fig. 3; col. 3, lines 52-64)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Ashley et al. (U.S. 5,528,630, hereinafter, "Ashley") in view of Kakuta et al. (U.S. 6,028,487 hereinafter, "Kakuta").

Regarding **claim 10**, Ashley teaches the transceiver system as claimed in claim 8. Ashley teaches: a first negative feedback path including a resistor from output of upper transmission amplifier to its inverse input; and a second negative feedback path for the transmission amplifier (from terminal 310 to terminal 314 through inverse

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terminal of left-hand receiver amplifier to inverse terminal of transmission upper amplifier; see Fig. 3).

However, Ashley does not explicitly disclose wherein said dual negative feedback network increases a relatively small impedance of the matching network to a larger line driver output impedance to match the characteristic impedance of the transmission line of said transceiver system.

Kakuta teaches in Fig. 2, output impedance can be adjusted by the first resistor R_{f1} ; gain can be adjusted by the first and the second resistors R_{f1} and R_{f2} . Therefore, by adjusting the gain and the output impedance by the resistors R_{f2} and R_{f1} , respectively, the gain and the output impedance can be independently controlled (col. 3, lines 24-31).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to incorporate the dual negative feedback of Kakuta teaching with transceiver system of Ashley for purpose of adjusting the gain without causing impedance mismatching, as suggested by Kakuta in column 4, lines 7-9.

Response to Arguments

6. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new grounds of rejection.

Conclusion

7. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Con P. Tran, whose telephone number is (703) 305-2341. The examiner can normally be reached on M - F (8:30 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service Office at telephone number (703) 306-0377.

cpt CPJ
February 6, 2004

A handwritten signature in black ink, appearing to read 'Minsun Oh Harvey', is written over the printed name.

**MINSUN OH HARVEY
PRIMARY EXAMINER**